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ABSTRACT

This paper discusses the ongoing debate over small clauses concerning the structure of the verb phrase in "I consider Bill smart." It is demonstrated that the subject constituent in question is not a small clause, but a Noun Phrase (NP), following Noun (N). It is shown that some peculiar phenomena under the small clause analysis are natural consequences of the NP analysis. Starting from the adjectival type, it is shown that all the possible subject small clauses share syntactic and distributional characteristics with noun phrases, rather than other kinds of small clauses. On the basis of the interesting paradigms of bound variable anaphora, disjoint reference, and negative polarity, the adjunction structure is proposed for the subject small clauses. The analysis presented shows hat the hierarchical structure is different between an NP with attributive interpretation and one with clausal interpretation. (VWL)

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Are Subject Small Clauses Really Small Clauses?

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Are Subject Small Clauses really Small Clauses?[1]

Miori Kubo

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1. Introduction

The ongoing debate over small clauses concerns the structure of the verb phrase in (1):

(1) I consider Bill smart.

Stowell (1981) and Chomsky (1981) argue that Bill smart is a constituent and propose the so-called small clause analysis. On the other hand, Williams (1983) and Schein (1982) consider it is not and that the object of consider can also be interpreted as a subject of a predication.

One of the stronger empirical arguments for the small clause analysis comes from Safir (1983). On the basis of the behavior of a small clause in subject position, Safir argues that a small clause is a real syntactic constituent. In this paper, however, I will demonstrate that the subject constituent in question is not a small clause, but an NP, following N. Chomsky's suggestion of this possibility mentioned in the footnote 3 in Safir (1983). It will be

1 I would like to thank Joseph Emonds, Toshifusa Oka, David Pesetsky, and John Whitman for their valuable comments and suggestions.

shown that some peculiar phenomena under the small clause analysis are natural consequences of the noun phrase analysis.

2. Safir's Argument for Small Clauses as Constituents

Safir's argument consists of two steps: First, he argues that the underlined part in (2) is a single constituent and next that the constituent is not an NP.

(2) Workers angry about the pay is just the sort of situation that the ad campaign was designed to avoid.
(Safir 1983, 732)

Let's start with the first part: Is the underlined part a constituent? First, "it is widely accepted that only a true constituent may occur in the subject position of S" (Stowell 1986, 299). Second, the underlined part can undergo subject-auxiliary inversion:

(3) a. Is workers angry over their pay revolutionary?
b.?Isn't workers angry over the pay just the sort of situation that the ad campaign was designed to avoid?
(Safir 1983, 732)

Third, the part in question undergoes raising.

(4) Workers angry about the pay does indeed seem to be just the sort of situation that the ad campaign was designed to avoid. (Safir 1983, 732)

Since only a constituent undergoes movement, it is conclusively shown that the underlined part is a constituent.

Then the next question is which category the constituent belongs to. There are at least two possibilities: one may be called the small clause analysis; namely, the constituent is S or AP, whether you take Chomsky's or Stowell's position. This option is indirectly taken by Safir. Safir gives two considerations which go against analyzing the constituent as an NP. One is concerned with the agreement facts between a subject and a verb. Observe that the verb in (2) is singular; thus he concludes that workers cannot be the head of its subject constituent. The other is drawn from a peculiarity of the interpretation of the sentence. The sentence must be interpreted as a situation (clausal interpretation), rather than as a real NP with attributive adjectives (attributive interpretation). Safir therefore concludes that the constituent is not an NP, and that it must be a small clause.

To be more specific, consider a sentence with a singular subject in a situational construction as follows:[2]

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[2] The clausal interpretation is allowed only in certain restricted constructions. Some examples are:

... is a situation.
... is in a mess.
... makes me sad/happy.
... upsets people.
... depresses people.

(5) A man angry over his pay makes me sad.

This sentence is ambiguous between a clausal (the situation in which a man is angry over his pay makes me sad) and an attributive (A man who is angry over his pay makes me sad) interpretation. What Safir is claiming is thus that the same apparent constituent belongs to different categories, depending on its interpretation: namely, the subject is an AP or S in the clausal interpretation and is an NP in the attributive interpretation.

The alternative to the small clause analysis may be called a noun phrase analysis; namely, it analyses the constituent as an NP, whether it takes clausal or attributive interpretation. This option is argued for in this paper.

3. Arguments for the Noun Phrase Analysis

I will give three arguments below. All show that "small clauses" in subject positions syntactically behave the same as ordinary NPs, rather than like small clauses in post-verbal positions (from now on, post-verbal small clauses).[3]

Although I don't try to specify the environment which permits the clausal interpretation, I will call this the situational construction and call the predicates used the situational predicates.

[3] I don't commit myself to whether there are small clauses in general. To argue for the noun phrase analysis here, it suffices to show that subject small clauses are entirely different from post-verbal small clauses, and rather are exactly the same as NPs, even granted the small clause

To call the constituent in question a "small clause" in subject position confuses the discussion: thus, I will call it a predication constituent.

3.1. On a Restriction on Postnominal Modification

It is well-known that most bare adjectives, specifically those termed characterizing adjectives by Milsalk (1974), cannot modify a noun in post head position.[4] On the other hand, small clauses in post-verbal position of course don't exhibit such a restriction. (6d) and (6e) are both grammatical:

(6) a.*I burned some books yellow.
b. I burned some books yellow with age.
c. I burned some yellow books.
d. I consider these cloth dirty.
e. I consider these books dirtier than necessary.

Let us observe whether the predication constituents exhibit this restriction.

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analysis for post-verbal position.

[4] His state-descriptive adjectives (e.g., drunk/thirsty/sober/hungry/available/absent/dead, etc.), on the other hand, can occur in postnominal positions in their bare forms. With the exception of one configuration which I return to in section 4.2. both NPs and predication constituents behave the same ways with regard to this two types of adjectives, so the argument in the text remains valid.

(7) a.*Lots of books dirty is a common problem in libraries.
b. Lots of books dirty from mistreatment is a common problem in libraries.

(8) a.*Workers angry is just the sort of situation that the ad campaign was designed to avoid.
b. Workers angry over their pay is just the sort of situation that the ad campaign was designed to avoid.

(9) a.*Children fat upsets me.
b. Children far from overeating upsets me.

The (a) sentences in (7-9) are all unacceptable, while the (b)s are all well-formed, which is exactly the same pattern as in (6).[5] It is thus shown that predication constituents behave exactly the same as NPs rather than as post-verbal small clauses. If Safir's analysis is correct and a predication constituent is a small clause, then it is not obvious at all why small clauses in subject position obey a constraint which governs NPs, while post-verbal small clauses do not.

3.2. Distributional Differences with regard to Cleft and Pseudo-cleft Sentences

Post-verbal small clauses cannot occur in focus

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5 The grammaticality increases in sentences like (7a), (8a) and (9a), when certain specifiers (e.g., almost) are used with the bare adjectives in the post-head positions. However, since the same degree of improvement is obtained in sentences like (6a), this does not affect the argument in the test, but rather reinforces it.

positions either in cleft and pseudo-cleft sentences, as shown in (10) and (11):

(10) a.*It is Bill silly that John believes.
b.*It is my brother intelligent who/what/that John considers.
c.*It is Bill off the ship that John expects.
d.*It is Bill the best student that John thinks.

(11) a.*What Chinese students consider is the current leadership rotten.
b.*What John thinks is long trips stupid.
c.*What they want is those new Toyotas off the ship.
d.*What they declared was Plate's Republic the best seller of the year.

On the other hand, both NPs and predication constituents do occur in focus positions both in cleft and in pseudo-cleft sentences, as demonstrated in (12-15):

(12) **Focused NPs in cleft sentences:**
a. It is Bill that John believes silly.
b. It is my brother who John considers intelligent.
c. It is Bill that John expects off the ship by midnight.
d. It is Bill that John named the best student.
e. It is Bill that the student selected president.

(13) **Focused predication constituents in cleft sentences:**

a. It is workers angry over their pay that looks revolutionary.

cf. Workers angry over the pay looks revolutionary.

b. It is streets filthy with litter that makes me sick.

cf. Streets filthy with litter makes me sick.

(14) **Focused NPs in pseudo-cleft sentences:**

a. What Chinese students consider rotten is the current leadership.

b. What John thinks stupid is long trips.

c. What John want off the ship is those new Toyotas.

d. What they declared the best seller of the year was Plato's Republic.

(15) **Focused predication constituents in pseudo-cleft sentences:**

a. What lessens my appetite is apples shiny with wax.

cf. Apples shiny with wax lessens my appetite.

b. What discourages the ordinary consumer is huge parking lots filled with cars.

cf. Huge parking lots filled with cars discourages the ordinary consumer.

Again predication constituents behave the same as NPs rather than like post-verbal small clauses.

In addition, since pseudo-clefts can focus any XPs, the grammatical difference between the post-verbal small clauses and predication constituents suggests that the former are not constituents, even though the latter are. At the least, they are quite different constructions. Moreover, since clefts accept only NPs or PPs in their focus positions, the

grammaticality in (13) shows that the predication constituents are NPs. If we analyze predication constituents as small clauses, as Safir argues, then we need some ad hoc device to explain why the post-verbal small clauses cannot be focused in clefts or pseudo-clefts, while the subject small clauses can. Beyond this, although the cleft sentences have been considered to be one of the most rigid tests for NP-hood, the description of the test would need to be changed to something like "any NPs, any PPs and small clauses that are in subject position, but not post-verbal small clauses, can appear in the focus position in the cleft sentences."

It might be possible to say that the subject in a post-verbal small clause cannot get a case when it appears in a focus position and for this reason the sentences in (10) and (11) are ungrammatical. However, it is not apparent first of all that an NP in focus position exemplified in (12) and (14) gets a case from the matrix verb, because be does not assign case anyway. Further, whether a subject of a post-verbal small clause gets a case or not in a focus position, it still cannot be explained why there is a difference in focusing ability between a predication constituent and a post-verbal small clause in the small clause analysis. Put another way, whatever the role of a matrix verb be in assigning case to an NP in focus position, there is no clear explanation on the grammaticality difference between a post-verbal small clause and a predication constituent in the small clause analysis.

On the other hand, in the noun phrase analysis argued

for in this paper, the fact that a predication constituent appears in a cleft sentence focus position like an ordinary NP does is a natural consequence.

3.3. On a Restriction on the Subject in a Predication Constituent

The final argument for the noun phrase analysis is drawn from the fact that a predication constituent obeys some restrictions which govern a noun phrase. The expletive it cannot occur in a predication constituent, while it freely occurs in a post-verbal small clause:

(16) a. I consider it sillier than anything.
b.*It sillier than anything makes me upset.
c. Mary finds it appropriate that you take a summer vacation.
d.*It appropriate that you take a summer vacation doesn't make me less jealous.

This phenomena is explained if predication constituents are NPs, because the expletive it cannot be a head of a noun phrase.[6] On the other hand, in the small clause analysis, it cannot be accounted for neatly why such a restriction applies to small clauses in subject positions, but not to post-verbal small clauses.

To summarize, throughout the three arguments,

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6 This fact has been pointed out to me by David Pesetsky.

predication constituents behave exactly the same as NPs, rather than as post-verbal small clauses. The explanation for the difference between predication constituents and post-verbal small clauses must depend on some totally ad hoc restrictions in the small clause analysis, while they are natural consequences in the noun phrase analysis. I believe it has conclusively been shown that a predication constituent should be analyzed as a noun phrase, rather than a small clause.

3.4. Other (Possible) Subject Small Clauses

There are other constructions which could possibly be argued to be subject small clauses, other than the type we have so far concentrated on.

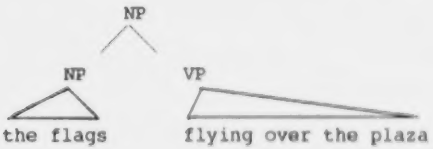
(17) a. Playing the piano is one of the most popular hobbies in Japan.
b. The children's playing the violin encourages me to study music.
c. The flags flying over the plaza is a good scene for a postcard.
d. Children in dangerous parks is a scene used to convince women to quit their jobs.

As for (17a) and (17b), they are gerunds, and it is well-known that they have the same distribution as NPs (Chomsky 1970 and Emonds 1976, among others). The subject in the gerund is not a head of the whole NP, but it is still controversial as far as its exact internal structure goes

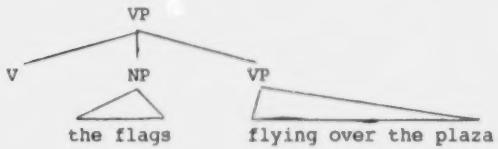
(Suzuki 1988, Emonds 1990). No matter what its internal structure is, however, the outermost brackets for the subjects in (17a) and (17b) are uncontroversially NPs, not small clauses.

Constructions as in (17c) are called accusative gerunds and they are well-examined in relation to perception verbs in Akmajian (1977). He argues that the constituent in the subject position in (17c) is an NP with the structure as in (18a), although the VP (i.e., flying over the plaza) adjoined to NP (i.e., the flags) can sometimes be extraposed in the post-verbal position as in (18b).

(18) a.



b.



Gee (1977) has argued against Akmajian's analysis by pointing out the "mis-agreement" between the plural subject and the singular verb, as exactly the same way as Safir has against the noun phrase analysis. I will explain in the next section this phenomenon on the basis of a closer examination of the

percolation mechanism.

Turning now to the sentence (17d), the subject is again an NP, rather than a small clause (i.e., either PP or S):

(19) Children in dangerous parks and adolescent crime is a scene used to convince women to quit their jobs.

As is well known, the conjunctions can only conjoin the categories of the same type. Since adolescent crime is doubtlessly an NP, the grammaticality of the sentence (19) argues that the constituent in question children in dangerous parks is an NP.

For (17c) and (17d), together with the adjectival type (e.g., workers angry over their pay), I will propose two different structures, one for the clausal interpretation, and the other for the attributive interpretation, and thereby explain the "mis-agreement" phenomenon and the peculiarity of interpretation, which are both used by Safir to argue against the noun phrase analysis.

4. Agreement and Interpretation

4.1. The Structure of the Predication Constituents

Let's now consider the two observations which are used by Safir as arguments against the noun phrase analysis: as summarized in section 2, one is the agreement facts and the other is the peculiarity of the small clause interpretation.

Observe the following examples:

(20) a. Paris and its perfumes fascinate American women.
b. Paris and its perfumes fascinates American women.

c. Sake and tofu make me sick.
d. Sake and tofu makes me sick.

First of all, although Safir argues that workers in (2), a plural noun, cannot be a head of a constituent in subject position because of the following singular verb, this does not guarantee that the predication constituents as a whole is not an NP. For, (20b) and (20d) literally show that plural NPs can take singular verbs.[7] Now, a question here is how we explain in the noun phrase analysis the fact that workers is not behaving as a head for the subject as a whole in (2). Taking into account the intuition that the small clause analysis tries to capture, namely, the fact that the NP and a postnominal modifier are in a predication relation, together with the fact that the whole subject is an NP, as we have demonstrated in the previous section, I propose the following structure for a predication constituent.

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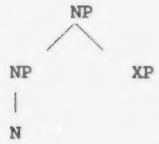
[7] There should be no doubt that Paris and its perfumes and sake and tofu are noun phrases. They cannot occur where small clauses occur:
(i) a. *I believed Paris and its perfumes.
b. *I believed sake and tofu.
The sentences in (i) are ungrammatical with the small clause interpretations of (20).

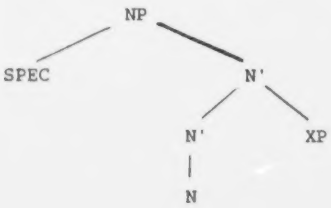
(21)



XP = AP, PP, (and possibly NP for "accusative gerunds")[8]

Here, the XP is adjoined to NP and the structure is clearly different from the well-argued structure for NPs (Hornstein and Lightfoot 1981) with attributive modifiers as in (22).

(22)



XP = AP, PP, (and possibly VP for "accusative gerunds")

As we have demonstrated in the previous section, XP adjoined to N' and NP share the same restrictions.

If we analyze a third person singular verb as a certain kind of default form which is taken when no [+plural] feature is available, the mis-agreement phenomenon discussed above can be explained by the difference in the two types of NPs in

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8 Jackendoff (1977) argues that "measure phrase" NPs are always between X' and NP. So it may be that any adjunct NPs should be measure phrases, and not predicates.

(21) and (22). The only thing we must say is that the number feature on N percolates as expected to the whole NP in the structure (22), but that it cannot reach the topmost NP in (21): The smallest XP is the domain for percolation from the head X. Since the topmost NP in (21) is not specified for number, the corresponding verb simply manifests itself in the unmarked singular form.

There are actually three more reasons for favoring the idea that the structure of the predication constituents is (21), rather than (22) of an attributive NP. First, consider the following data.

(23) **Bound variable anaphora**

a. Every worker (who is) angry about pay is in just the sort of situation **he** should avoid.

b.*Every worker angry about pay is just the sort of situation **he** should avoid.

c.*Every worker being angry about pay is just the sort of situation **he** should avoid.

d.*The situation of every worker angry about pay is just the sort of situation **he** should avoid.

(a) involves an NP with attributive interpretation, (b) a predication constituent, (c) an accusative gerund and (d) an NP which contains another NP. If the structure for (a) is the one of (22) and the structure for (b) and possibly (c) are like (21) as we have proposed, then the ungrammaticality of (b)-(d) can be explained straightforwardly; namely, the antecedent NP <u>every worker</u> does not c-command the bound

variable.

Secondly, there is a grammaticality difference between an NP with an attributive modifier on the one hand and a predication constituent or an complex NP (Ross 1967) on the other, with regard to the disjoint reference.

(24) **Disjoint Reference**

a.*Workers (who are) angry over their pay are more useful to them than to their bosses.

cf. Workers (who are) angry over their pay are more useful to themselves than to their bosses.

b. Workers angry over their pay is more useful to them than to their bosses.

c. Workers being angry over their pay are more useful to them than to their bosses.

d. The situation of workers angry over their pay is more useful to them than to their bosses.

In (a), given the structure in (22), since them is c-commanded by workers in its governing category (Chomsky 1981, Chapter 3), the sentence is out. The fact that the predication constituents behaves the same way as an accusative gerund and a complex NP, in which it is well-known that the workers is not a head and is further embedded in another NP, supports the NP-adjunction structure for the predication constituents. In (b)-(d), them is far enough from workers for disjoint reference not to apply.

Thirdly, negative polarity shows a clear difference of accessibility of the head N to exterior material between an

NP with an attributive interpretation and a predication constituent.

(25) **Negative Polarity**

a. No workers (who are) angry about working conditions are ever going to bring about a better situation.

b.*No workers angry about working conditions is ever going to bring about a better situation.

c.*No workers being angry about working conditions is ever going to bring about a better situation.

d.*The situation of no workers angry about working conditions is ever going to bring about a better situation.

Again, a predication constituent patterns with a complex NP rather than with an NP with an attributive modifier. If items with negative polarity (i.e., ever here) must be c-commanded by a negative item (i.e., no (workers) here), then the above paradigm follows straightforwardly from the structures in (21) and (22). In (25a), which has a structure like (22), the negative item c-commands the item with negative polarity, while in (25b-d), the negative item is to far embedded to c-command the negative polarity item.

To sum up, Safir's observation that the N does not behave like a head for a predication constituent on the basis of agreement facts, together with other paradigms which reinforce his observation, are equally well explained by the NP-adjunction structure proposed for a predication constituent in the noun phrase analysis and this structural

difference from the structure of attributive NPs. The above three paradigms could not be better explained by a difference in category labels; all these paradigms involve c-command and hierarchy, and for them the label of a small clause subject is irrelevant.

4.2. Attributive and Clausal Interpretations

The second peculiarity of predication constituents pointed out by Safir (1983) is that they are interpreted as a situation, rather than as a referential NP.

Notice that the (a) and (c) sentences in (20) are ambiguous, while the (b) and (d) are not. For example, the (c) sentence has two readings: one is that sake makes me sick and that tofu makes me sick. The other is that sake and tofu together makes me sick. Put another way, the first interpretation is paraphrased by (26a) and the second is paraphrased by (26b).

(26) a. Both sake and tofu make me sick.
b. Sake and tofu together make me sick.

On the other hand, (20d) has only the (26b) interpretation. Notice this interpretation exactly corresponds to Safir's clausal interpretation for small clauses. Since a genuine noun phrase (coordinated NP's) can also take a clausal interpretation, this phenomenon itself does not conflict with the noun phrase analysis proposed here.

The structure proposed for predication constituents actually is proper for this clausal interpretation; namely, [NP XP] is a predication relation, where NP is a subject and XP is a predicate which modifies the subject.

Interestingly, there is a gap in the availability of the attributive interpretation, which may be explained nicely by the analysis proposed here: when proper names and personal pronouns are used with a post-nominal adjective, only a clausal interpretation, but not an attributive interpretation is available.

(27) a.*Bill sad over his mother's death cries every night.
b. Bill sad over his mother's death depresses me.

(28) a.*Jim enthusiastic about baseball is spending all day exercising.
b. Jim enthusiastic about baseball irritates me.

(29) a.*Her furious about the neighbor's dog sued the family.
b. Her furious about the neighbor's dog is an entertaining situation for her friends.

Chomsky (1970) argues that a fully specified definite N such as a proper noun or a personal pronoun cannot be doubly specified as definite by being modified by an attributive modifier within a single NP. If we take this view, then the above paradigm follows from the structural differences between the two interpretations. In the structure for an attributive interpretation as in (22), the fully specified

definite head N is directly modified by a restrictive modifier inside of a single NP, an thus, the sentence is ungrammatical. On the other hand, in the adjunction structure for clausal interpretation as in (21), two definite features don't conflict within a single NP; each can be associated with its own NP.

Summing up, the clausal interpretation, which is considered characteristic of a small clause can be well captured by the adjunction structure proposed in the noun phrase analysis. Beyond this, the analysis proposed here makes an interesting prediction on the distribution of the two types of interpretations, which the small clause analysis does not have anything to say.

5. Conclusion

We have examined in this paper on the nature of so-called subject small clauses. Starting from the adjectival type, (e.g., the constituent underlined in (2)), which is argued to be a small clause by Safir (1983), we have seen that all the possible subject small clauses share syntactic and distributional characteristics with noun phrases, rather than other kinds of small clauses.

On the basis of the interesting paradigms of bound variable anaphora, disjoint reference, and negative polarity, the adjunction structure as in (21) is proposed for the subject small clauses. We have seen that the "mis-agreement" phenomenon and peculiarity of interpretation, which are used

by Safir to argue against the noun phrase analysis, don't really conflict with the fact that the outermost bracket for the predication constituents is an NP. Rather, all the above paradigm show that the hierarchical structure is different between an NP with attributive interpretation and one with clausal interpretation. Beyond this, the noun phrase analysis makes an interesting predication on the availability of the two types of interpretations, attributive and clausal, whereas the small clause analysis have nothing interesting to say. One of the strongest arguments for the small clause analysis, therefore, turns out to be invalid.

Although we still have to wait for future research on the true nature of small clauses, we have clarified, in this paper, one of the basic facts which the small clause debate crucially depends on.

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